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ABSTRACT

Bilingualism in the Computer Age, a project of the New York City (New York) Board of Education, completed its fourth year (the 1989-90 school year) and was evaluated. The project offered 241 limited-English-proficient Spanish-speaking students the opportunity to study career and vocational subjects while improving their English and native language skills at Morris High School in the Bronx. The results of the evaluation indicate that the program was fully implemented and that students received instruction in English as a Second Language (ESL), native language arts (NLA), content area subjects, computer skills, career education, and health awareness. The project also offered staff development and parental involvement activities. The project met its ESL, attendance, and dropout prevention objectives. It partially met its content area subjects and computer training objectives, but did not meet its NLA objectives. Findings also show that due to lack of statistical data, career awareness, cultural heritage, and staff development objectives could not be assessed. Consequently, it is recommended that statistical data needed to measure all the objectives should be provided, and that the computer training objectives should be modified in order to become more realistic. (JB)

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OREA Report

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FINAL EVALUATION REPORT

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FINAL EVALUATION REPORT

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BILINGUALISM IN THE COMPUTER AGE
1989-90

SUMMARY

- Bilingualism in the Computer Age was fully implemented. Students received instruction in English as a Second Language (E.S.L.), Native Language Arts (N.L.A.), content area subjects, computer skills, career education, and health awareness. The project also offered staff development and parental involvement activities.

- The project met its E.S.L., attendance, and dropout prevention objectives. It partially met its content area subjects and computer training objectives. It did not meet its N.L.A. objective. It was impossible to assess the objectives for cultural heritage awareness, career education, and staff development because of a lack of data.

Bilingualism in the Computer Age completed its fourth year--the first year of an Elementary and Secondary Education Act (E.S.E.A.) Title VII two-year extension. The project offered 241 Spanish-speaking students of limited English proficiency (LEP) the opportunity to study career and vocational subjects while improving their English and native language skills. The project operated at Morris High School in the Bronx.

The conclusions, based on the findings of this evaluation, lead to the following recommendations:

- Provide the data necessary to evaluate all of the program's objectives.

- Modify the computer training objective to make expected outcomes more realistic.

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This report has been prepared by the Bilingual, Multicultural, and Early Childhood Evaluation Unit of the Office of Research, Evaluation, and Assessment. Thanks are due to Carlos Bordé for collecting the data and writing the report.

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I. INTRODUCTION

This report documents the Office of Research, Evaluation, and Assessment's (OREA's) evaluation of the Elementary and Secondary Education Act (E.S.E.A.) Title VII program, Bilingualism in the Computer Age. The project, at Morris High School in the Bronx, was in its fourth year of operation--the first of a two-year extension of funding. Spanish-speaking students of limited English proficiency (LEP) received instruction in English as a Second Language (E.S.L.), Native Language Arts (N.L.A.), content area subjects, computer skills, career education, and health awareness.

PARTICIPATING STUDENTS

Participating students were primarily from the Caribbean, Latin America, and the United States. The project reported that approximately five percent of program students lacked literacy skills in their native language. All program students were eligible for the school's free lunch program, evidence of low family income.

The project admitted 241 students to the program during the course of the year. Of this number, 192 attended both semesters, 26 attended fall only, and 23 attended spring only. (Total fall attendance was 218; total spring attendance was 215.)

STAFF

Title VII funded a program coordinator, who held a master's degree. The project was also staffed by a director (with a master's degree), two guidance counselors, a job counselor, and a social worker. All were bilingual in English and Spanish.

II. IMPLEMENTATION

Students who scored at or below the fortieth percentile on the Language Assessment Battery (LAB) were eligible for the program. Project staff also used students' records and scores on English, Spanish, and mathematics tests to determine eligibility for participation. In addition, bilingual guidance counselors assessed students' needs and capabilities to insure appropriate placement within the program.

The program offered participating students beginning, intermediate, and advanced levels of E.S.L. and N.L.A.; bilingual content area courses in mathematics, science, and social studies; computer skills; career education; and health awareness, including instruction in such activities of daily living as self-care and hygiene. All E.S.L. and N.L.A. classes had at least one assigned period in the computer room each week. During that time, students worked with both the computer paraprofessional and the E.S.L. or N.L.A. teacher.

The project provided support services, including personal and academic counseling, medical services, and job preparation. It also conducted activities for staff development and parental involvement.

III. OUTCOMES

INSTRUCTIONAL

English as a Second Language

- As a result of participating in the program, 65 percent of students will demonstrate significant gains in English language achievement.

Matching pre/posttest data on the LAB were available for 130 students. The mean gain was 3.1 Normal Curve Equivalents (N.C.E.s) (s.d.=7.1), and analysis indicated a significant gain ($p<.05$).

The project met its E.S.L. objective.

Native Language Arts

- As a result of participating in the program, 75 percent of the students will show significant gains in Spanish language achievement.

Passing rates were available for 188 students in the fall semester and 173 in the spring. In the fall, 71 percent achieved a passing grade of at least 65; in the spring, 61 percent did so.

The project did not meet its N.L.A. objective.

Content Area Subjects

- As a result of participating in the program, 65 percent of the students enrolled in content area classes will pass teacher-made final examinations in mathematics, science, and social studies.

Over 65 percent of participating students earned final grades of at least 65 in science in both semesters. (See Table 1.) Fewer than 65 percent of the students did so in mathematics and social studies.

The project met its content area objective in science only.

TABLE 1

Student Achievement in Content Area Courses

Subject	Fall Semester		Spring Semester	
	Number of Students	Percent Passing	Number of Students	Percent Passing
Mathematics	159	50.9	110	36.4
Science	153	73.9	116	81.9
Social Studies	190	61.6	168	55.4

- Over 65 percent of the students earned passing grades in science.

Computer Training

- As a result of participating in the program, 90 percent of the students will demonstrate computer literacy in the ninth and tenth grades, word processing skills in the eleventh grade, and programming skills in the twelfth grade.

Computer training for bilingual students was not limited to those enrolled in computer classes. Since all E.S.L. and N.L.A. classes had at least one assigned period a week in the computer room, all students developed computer literacy, became proficient in word processing, and were able to use the printer. They did not, however, develop programming skills.

Bilingualism in the Computer Age, therefore, partially met its objective for computer training.

Career Education

- As a result of participating in the program for one year, 80 percent of students enrolled in the orientation course will demonstrate a knowledge of job-searching techniques.

The project did not provide the data necessary for OREA to evaluate the objective for career education.

NONINSTRUCTIONAL

Attendance

- Program students will achieve an overall attendance rate which will equal or surpass that of the school as a whole.

Participating students' attendance rate was 81 percent as compared to mainstream students' attendance rate of 65 percent, a significantly higher ($p<.05$) rate. Thus, the program met its attendance objective.

Dropout Prevention

- Students participating in the program will demonstrate a dropout rate which will be equal to or less than that of the total school population.

Program students' dropout rate was two percent, while the rate for mainstream students was ten percent. Thus, the program met its dropout prevention objective.

Cultural Heritage Awareness

- As a result of participating in the program, 90 percent of the students will demonstrate an increased awareness of their own culture.

The project did not provide OREA with data to assess this objective.

Staff Development

- Teachers participating in the program will demonstrate significant improvement in the skills necessary to assess students' needs, to select appropriate methods of instruction, and to write appropriate courses of study.

- Teachers participating in the program will demonstrate significant improvement in their skills in handling and programming computers.

Teachers and project staff attended a variety of conferences and enrolled in university courses which dealt with bilingual education, vocational education, and computer literacy. Staff also developed a handbook entitled "Introduction to Computers for Teachers." However, the project did not provide the data necessary to assess the objectives as stated.

FOLLOW-UP OF PROGRAM PARTICIPANTS

During the year, six students left the program when they transferred to another school; one student was referred to a gifted and talented program; 14 students were mainstreamed; and 19 graduating students enrolled in post-secondary institutions. The 1990 valedictorian and salutatorian at Morris High School were both former program participants.

IV. CONCLUSIONS AND RECOMMENDATIONS

The project, in its fourth year, met its objectives for E.S.L., attendance, and dropout prevention. It partially met its objectives for content area subjects and computer training. The part of the objective for computer training that dealt with the development of programming skills may have been unrealistic. The

project is considering its modification for the future. Bilingualism in the Computer Age did not provide data necessary to assess the objectives for cultural heritage awareness, career education, and staff development.

The major strengths of the program were in its integration of computer training in the subject areas of E.S.L. and N.L.A., and its support services, which addressed students' job-preparation and health needs.

The conclusions, based on the findings of this evaluation, lead to the following recommendations:

- Provide the data necessary to evaluate all of the program's objectives.
- Modify the computer training objective to make expected outcomes more realistic.